NRCS Natural Resources Conservation Service

Residue Management, Seasonal

WV Conservation Practice Job Sheet *Code 344*

Definition

This practice entails managing the amount, orientation, and distribution of crop and other plant residues on the soil surface during part of the year, while growing crops in a clean tilled seedbed.

Purpose

This practice may be applied as part of a conservation management system to reduce sheet and rill erosion or provide food and cover for wildlife.

Conditions Where Practice Applies

This practice applies to all cropland and other land where crops are grown and includes residue management methods practiced during the part of the year from harvest until residue is buried by tillage for spring seedbed preparation.

Criteria

All loose residue should be distributed evenly throughout the surface of the field.

A. CRITERIA FOR SHEET AND RILL EROSION

Corn stalks provide good soil protection. Over-winter decomposition of crop residues will generally reduce the amount by about 30% which adds organic matter back to the soil.

The amount of residue needed to reduce erosion within acceptable soil loss is determined using current approved erosion prediction technology. Contact the local NRCS field office to determine the amount of residue necessary for your operation and objectives. The partial removal of residue by means such as baling or grazing must be limited to retain the amount needed. The remaining residue should be maintained on the surface.

In general, any tillage that occurs during the management period should be limited to methods which leave a minimum of 30% of soil surface covered by residue evenly distributed on the surface between harvest and spring planting. (See Table 1)

Corn or sorghum stalks may be shredded or small grain stubble may be clipped when pest control is needed, provided adequate amounts of residue are left on the soil surface for protection.

Any tillage that occurs should be limited to methods which leave residue on the surface and maintain the planned cover conditions

B. CRITERIA TO PROVIDE FOOD AND COVER FOR WILDLIFE

In addition to reducing erosion on crop fields and adding organic matter back into the soil, many species of wildlife utilize the waste grains and residues from crop fields as supplementary food sources.

Small grain fields and waste grains provide excellent bobwhite quail brood rearing and feeding areas. In West Virginia where quail management is feasible, a target of 30-45% residue remaining on the surface is

desirable. Quail utilize these areas because it remains more open at ground level to enable their movement. As much as 70% of any brood-rearing cover can be open, bare ground.

Where ring-necked pheasants occur, crop fields of corn, sorghum, oats, wheat and barley stubble are extremely important for nesting, loafing and food sources. The residue from these fields may be left in the form of stubble. The height of the stubble remaining on the field may be important for some species of wildlife. As a general rule, cut at the highest possible height (12-24 inches) or use a stripper header. If possible, (depending on the crop) delay the cutting until after primary nesting months (March 15 –July 15).

Standing rows of grain or other crops left unharvested may also be valuable to wildlife. Leave several standing rows of unharvested crops along the edges of crop fields and use conservation tillage to leave waste grain on the surface following harvest.

Residues from grain and seed crops are further enhanced by being located in close proximity to frequently disturbed grasslands, old field communities, weedy field borders, legume plantings, and other good brood-rearing cover.

Residue management for wildlife works best in conjunction with other practices including field borders, warm season grass establishment and other practices that establish early successional habitat and/or edge. Contact the local NRCS field office to assist you with planning this practice in conjunction with other wildlife management practices.

Operation and Maintenance

It is preferable to leave residues on the soil surface. Mowers or shredders help to distribute and reduce stem size, which leads to a more rapid decomposition. A shallow, light disking will hasten decomposition even more. Disking residues from vegetables and other low-residue-producing crops may not leave a sufficient amount of residue for ground cover.

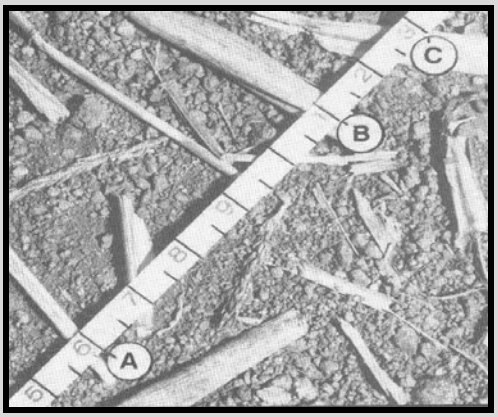
Residue should be maintained throughout winter to provide the benefits of its intended use.

Residue should not be burned, indiscriminately grazed or otherwise removed.

ESTIMATING PERCENT RESIDUE COVER

Use a tape measure line for direct field measurement. Use one foot marks on a 100-foot tape, laying the tape diagonally across rows.

Walk directly over the line, viewing it from the same angle, and count each mark that touches crop residue. Always use the same side of the tape.

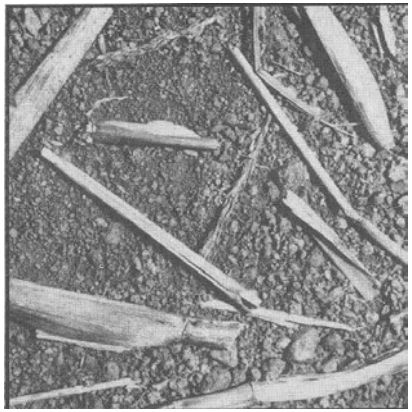


In the picture above, using the LEFT edge of the tape, points A and B touch residue. However, C touches residue only on the RIGHT side of the tape and should not be counted. The total number of points touching residue will represent the percent cover. Residue measurements for estimating soil erosion should always be taken after planting.

IMPLEMENT	PERCENT REDUCTION IN SOIL SURFACE RESIDUE
Moldboard Plow	>90
Offset disk 24-inch disk blades	60-80
Chisel plow with twisted shanks	50-60
Chisel plow with straight points	30-50
Tandem disk	40-50
Field Cultivator	30
V-Ripper or subsoiler	20-30
Paraplow	20-30
Ridge Till Planter	20-30
No-till Planter	>10

Table 1. Guidelines for Estimating Reduction in Crop Residue Left on Soil Surface after Each Pass Over the Field with Tillage or Planting Equipment

Residue Management, Seasonal – WV Job Sheet

15% CORN RESIDUE	30% CORN RESIDUE	50% CORN RESIDUE	50% CORN AND SOYBEAN RESIDUE
			
15% SOYBEAN RESIDUE	**30% SOYBEANS RESIDUE**	**50% SOYBEANS RESIDUE**	
			

NRCS Natural Resources Conservation Service

Specifications

Site-specific requirements are listed on the following pages of this job sheet. Specifications are prepared in accordance with the WV NRCS Field Office Technical Guide. Information listed in this job sheet is considered to be part of the conservation plan.

Residue Management, Seasonal – WV Job Sheet

Client:	**Farm #:**
Location:	**Tract #:**
Planner:	**Date:**

Purpose (check all that apply)	
☐ Sheet and Rill Erosion	☐ Wildlife Habitat Management Target Species: _____
☐ Other (specify): _____	

Layout	**Field_____**	**Field_____**	**Field_____**
Tillage Machinery, Equipment, or Implement(s) Used			
Crop or Rotation			
Percent Residue Cover Required			
Residue Type			
Duration or Critical Period(s) [1]			
Soil Conditioning Index (SCI) [2]			
Stubble Height (if applicable)			
Highly Erodible Lands			
Acceptable Grazing Periods (if applicable)			

[1] Identify the period to leave residue for the intended purpose. For wildlife, the critical period will be identified by the WVWHET and the 645 Upland Wildlife Habitat Management standard.

[2] SCI provides an indication of the soil condition trend based on planned management. Positive values indicate an upward trend. Negative values indicate a downward trend. The values are based on how crops and management affect soil organic matter content.

If needed, an aerial view, map or a sketch of the practice can be shown below for clarity. Other relevant information, complementary practices and measures, and additional specifications may be included.

Refer to the conservation plan map for practice location.

Additional Specifications and Notes: (i.e. additional notes, operation and maintenance specifics, etc.)

Residue will be maintained as described in the section entitled “Operation and Maintenance”. **Additional Notes:**

Questions regarding the operation or establishment of this practice should be directed to:

_____ **at**_____